

What Is Claimed Is:

1. A laser device, comprising:

a laser resonator made up of a mirror having predetermined transparency and an adaptive optics;

a laser medium disposed inside said laser resonator; and

a dispersion element for receiving an output light from said laser medium.

2. A laser device, comprising:

a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band, which is disposed inside a laser resonator;

an adaptive optics having a mirror for receiving an output light from said laser medium;

a grating for receiving a light reflected by said mirror of said adaptive optics; and

a mirror having a predetermined transparency, which is disposed for receiving a diffraction light from said grading after the light is reflected by said mirror of said adaptive optics.

3. A laser device, comprising:

a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band, which is disposed inside a laser resonator;

a grating for receiving an output light from said laser medium;

an adaptive optics having a mirror for receiving a diffraction light from said grating; and

a mirror having a predetermined transparency, which is disposed for receiving a light reflected by said mirror of said adaptive optics after the light is diffracted by said grating.

4. A laser device, comprising:

a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band, which is disposed inside a laser resonator;

a prism for receiving an output light from said laser medium;

an adaptive optics having a mirror for receiving a light that has been dispersed by the prism; and

a mirror having a predetermined transparency, which is disposed for receiving a light reflected by said mirror of said adaptive optics.

5. A laser device, comprising:

a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band, which is disposed inside a laser resonator;

a first adaptive optics having a mirror for receiving an output light from said laser medium;

a birefringent filter for receiving a light reflected by the mirror of said first adaptive optics;

a second adaptive optics having a mirror for receiving a light transmitted through said birefringent filter; and

a mirror having a predetermined transparency, which is disposed for receiving a light reflected by said mirror of said second adaptive optics.

6. A laser device, comprising:

a laser diode chip where reflection on one end surface is prevented and total reflection on the other end surface is permitted;

a grating for receiving an output light from said one end surface of said laser diode chip; and

an adaptive optics having a mirror for receiving the diffraction light from said grating.

7. A laser device according to any one of Claim 1, Claim 2, Claim 3, Claim 4, Claim 6 and Claim 6, wherein

said adaptive optics is any one of a tracking mirror and a deformable mirror.

8. A wavelength selecting method of a laser device, wherein

an output light from a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band is reflected on the mirror of said adaptive optics to make the light incident to a grating such that a first-order diffraction light having a predetermined wavelength from said grating is made incident to the mirror of said adaptive optics, and

a light having a wavelength, which has been diffracted by said grating and made incident to the mirror of said adaptive optics, is allowed to reciprocate within a laser resonator to

generate laser oscillation and is output.

9. A wavelength selecting method of a laser device, wherein an output light from a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band is made incident to a grating, a first-order diffraction light having a predetermined wavelength, which has been diffracted by the grating, is made incident perpendicularly to the mirror of an adaptive optics, and

a light having a wavelength, which has been made incident perpendicularly to the mirror of said adaptive optics and reflected, is allowed to reciprocate within a laser resonator to generate laser oscillation and is output as a 0-th order light from said grating.

10. A wavelength selecting method of a laser device, wherein an output light from a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band is made incident to a prism to disperse the light, a light having a predetermined wavelength, which has been dispersed by the prism, is made incident perpendicularly to the mirror of an adaptive optics, and

a light having a wavelength, which has been made incident perpendicularly to the mirror of said adaptive optics and reflected, is allowed to reciprocate within a laser resonator to generate laser oscillation and is output.

11. A wavelength selecting method of a laser device, wherein

an output light from a laser medium capable of performing laser oscillation in a predetermined range of a wavelength band is reflected on the mirror of a first adaptive optics and made incident to a birefringent filter, a light having transmitted through said birefringent filter is made incident to the mirror of a second adaptive optics, and

a light having a wavelength, which has been made incident to the mirror of said second adaptive optics and reflected, is allowed to reciprocate within a laser resonator to generate laser oscillation and is output.

12. A wavelength selecting method of a laser device, wherein

an output light from a laser diode chip is made incident to a grating, a first-order diffraction light having a predetermined wavelength, which has been diffracted by said grating, is made incident perpendicularly to the mirror of an adaptive optics, and

a light having a wavelength, which has been made incident perpendicularly to the mirror of said adaptive optics and reflected, is allowed to be output as a 0-th order light of said grating.

13. The wavelength selecting method of a laser device according to any one of Claim 8, Claim 9, Claim 10, Claim 11 and Claim 12, wherein

said adaptive optics is any one of a tracking mirror and a deformable mirror.